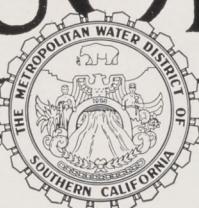


# • COLORADO RIVER • AQUEDUCT NEWS

THE METROPOLITAN WATER DISTRICT

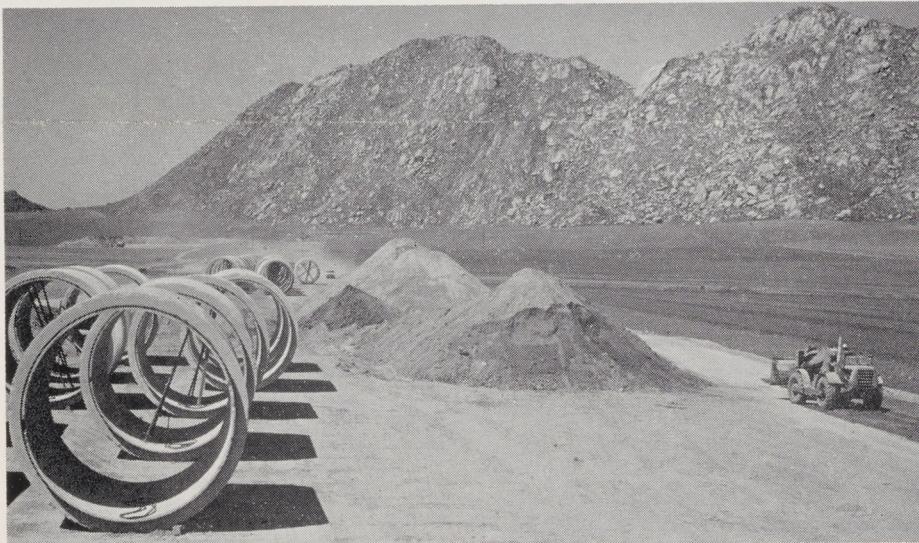


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Shown above is a pipe storage area for some of the 13-foot inside diameter pipe now being installed on the Colorado River Aqueduct under the District's \$200 million expansion program. In the background are the Bernasconi Hills through which the aqueduct extends in a 6220-foot tunnel. This and all other tunnels on the aqueduct were constructed to full size initially but most of the pipe siphons were designed for two barrels. This pipe is being used for the construction of the Lakeview Siphon about three miles west of the town of Lakeview in Riverside County.

## District And Others Urge Water Development Program

The Metropolitan Water District on April 8 joined with six other agencies and interested groups in commending Governor Edmund G. Brown on the progress made thus far in the development of a State water program and in outlining the additional steps that must be taken to bring about a successful launching of the program.

The message to the Governor was in the form of a telegram, the text of which follows:

"Since your proposals to the Legislature on January 22 for getting California's water program under way, there have been significant developments. The Assembly has agreed to reservation of the Investment Fund for the water program. There has been substantial agreement on State-Federal cooperation with respect to the San Luis Reservoir. Legislation has been introduced to authorize a bond issue and to protect the validity of contracts. All these things are hearten-

ing and represent progress. They do not as yet constitute accomplishment.

"To have a water development program of substance there must follow: Approval by the Legislature of submitting the bond issue to a vote by the people. Approval of the bond issue by vote of the people. For any bond issue to receive public support it must #1 be specific as to its exact purposes; #2 it must be adequate to complete construction to the extent of fulfilling its purpose. Uncertain money sources depending upon subsequent income or appropriation not now available should be applied to reduce the amount of bonds sold but not to reduce the amount authorized. Also there must be assurance that water user entities will contract for repayment of all reimbursable costs.

"Assurance by Constitutional Amendment that the integrity of contracts will be protected. This is a basic essential of the program. Enactment by Legislature of measure making transfer of the San Luis site dependent upon a contract

(Continued on Page Two)

## Southland To Suffer No Acute Water Shortage

Despite the extremely dry period now being experienced by Southern California, there will be no critical water shortage in the areas served by the Metropolitan Water District which encompasses approximately one-half of the State's population and assessed valuation.

This assurance was given on April 23 by Robert B. Diemer, General Manager and Chief Engineer of the Metropolitan Water District, speaking before a meeting of the Independent Bankers Association of Southern California in the Music Room of the Biltmore Hotel.

"For a number of years, with one or two exceptions, Southern California has been undergoing an extremely dry cycle, amounting in some areas to severe drought," Mr. Diemer said. "It is true that last year the rainfall in the Los Angeles area was above normal but this was one of the exceptions.

"It now appears that we may be entering on an even drier period. Los Angeles has gone for nearly two months without recording any measurable precipitation. And this during part of the period that might normally be considered our rainy season," he said.

He pointed out that since 1952 the Metropolitan Water District has been engaged in a \$200 million expansion program to bring the Colorado River Aqueduct and its distribution system to its full planned capacity of more than one billion gallons of water a day.

"When the expansion of the main Aqueduct is completed early next year, the District will be equipped to supply the water needs of the people living within its boundaries for the next 15 years," Mr. Diemer stated.

"In addition, we will be able to furnish large amounts of Colorado River water for a comprehensive program of underground water replenishment to refill the badly depleted underground

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COLORADO RIVER  
**AQUEDUCT NEWS**  
 THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

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## Water Program

(Continued from Page One)

having been agreed to by the State and Federal governments. If this year's legislature session takes the steps to accomplish the above listed needs, the California water program will be launched in a harmonious atmosphere in the fall of 1960. However, there should be no doubt as to the necessity of favorable action on every one of the components.

"The undersigned offer the fullest cooperation in helping to implement the program above outlined."

J. E. Fishburn, Jr., President, Los Angeles Chamber of Commerce; James Krieger, Vice Chairman, Southern California Water Coordinating Conference; J. C. Moller, Jr., President, Board of Water and Power Commissioners of Los Angeles; Joseph Jensen, Chairman of Board, Metropolitan Water District of Southern California; Howard Crooke, General Manager, Orange County Water District; William P. Price, Jr., General Manager, United Water Conservation District, Ventura County; and Board of Directors, Western Municipal Water District of Riverside County.

The principles set forth in the message to Governor Brown were approved by the Los Angeles County Board of Supervisors at its meeting on April 14.

"Taking into account the money invested in the Aqueduct's first development and the funds thus far invested in a major expansion program, the Aqueduct at this time represents an investment of \$375 million. Had all of this construction work been deferred to the present time, it would involve a cost of close to a billion dollars," Mr. Diemer declared.

"The Colorado River Aqueduct was completed in its initial development in 1941 with the proceeds of a \$200 million bond issue voted by the people in 1931. This was the largest bond issue ever submitted to a popular vote up to that time and it was approved by a ratio of nearly 5 to 1," Mr. Diemer declared.

He pointed out that much of the current expansion program is being financed with the proceeds from the sale of short term bonds which were authorized by the terms of Proposition "W".

"Proposition 'W' was submitted to the voters in the June 5, 1956, election and was passed by a ratio of 11 to 1.



Two representatives of the Arrowhead Area Council, Inc., Boy Scouts of America were present at the March 10 meeting of the District Board of Directors to express the Council's appreciation to the District for its cooperation in making a campsite available to the Scouts for a Colorado River Explorer Base. As a token of their appreciation they presented the Board with a fine oil painting of three Scouts. Shown above, left to right, are Edward H. Saxon, Scout Executive, J. Mac Coltrin, President of the Arrowhead Area Council, District Board Chairman Joseph Jensen and General Manager Robert B. Diemer.

## For the RECORD

(The following items are noted from the report of General Manager and Chief Engineer Robert B. Diemer, filed April, 1959, covering District operations for March, 1959.)

**Colorado River**—The water surface of Lake Mead dropped 3.49 feet to elevation 1176.57 feet above sea level, and usable storage decreased 459,000 acre-feet to 20,773,000 during March. Average rate of discharge at Hoover Dam for the month was 13,500 cfs as compared with 23,220 in March 1958.

**Power and Pumping**—Hayfield plant delivered 53,729 acre-feet of Colorado River water for distribution during March. Delivery was on one-pump flow until March 3, on four-pump flow to March 6, and then on a five-pump flow for the balance of the month. The District's share of Parker energy was 23,011,771 kwhrs. Edison interchange energy delivered to the District amounted to 26,870,400 kwhrs. Peak deliveries to and from Edison Company were 110,000 kw and 140,000 kw, respectively.

**Weymouth Softening and Filtration Plant**—Colorado River water was softened from 310 to 193 ppm of hardness at an average rate of 470 cfs during March. The daily rate of flow varied from a maximum of 533 cfs to a minimum of 337.

**Construction**—On installation of Pumping Units 7, 8 and 9, the contract is 73% complete, with work in progress at all five plants. At Intake, work is 66% complete; at Gene, 80%; 85% at Iron Mountain; and 63% at Hayfield. The contract for Pump Delivery Line No. 3 is 100% complete.

The contract is 31% complete on Canals and Box Siphons—Schedules 11C, SD1C, SD2C, SD3C, and SD4C.

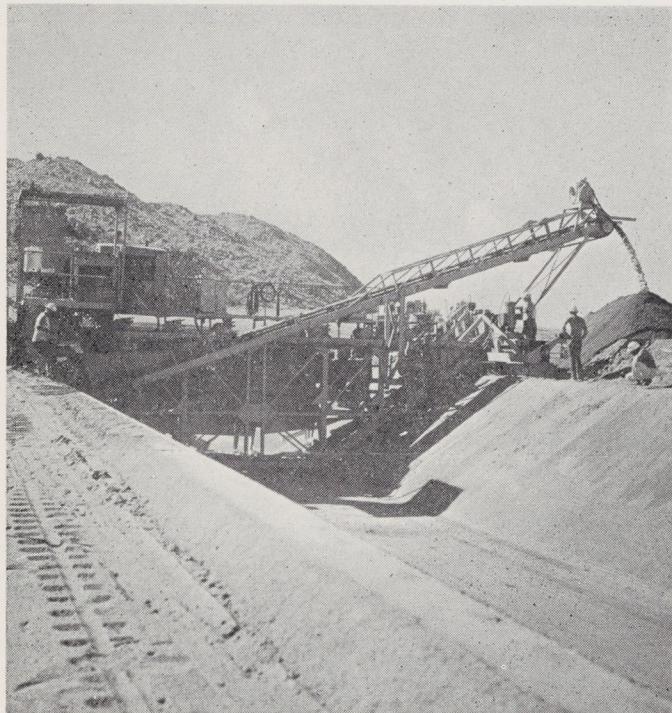
On Pipe Siphons—Schedules 11P, 12P and SDXP—the work is 36% complete.

Schedules SD8P and SD9P (San Diego Aqueduct) the work is 92% complete and work on Schedules SD10P and SD11SC, work is 96% complete. On relocation of a portion of the Santa Monica Feeder, the work is 90% complete.

**Purchasing**—Total expenditures covered by 416 purchase orders and 4 agreements during March aggregate approximately \$82,928.

Colorado River "experts" are now busily forecasting the flow of the River in acre-feet from April to July. They all know it will be below normal. But, how much? Story next month.

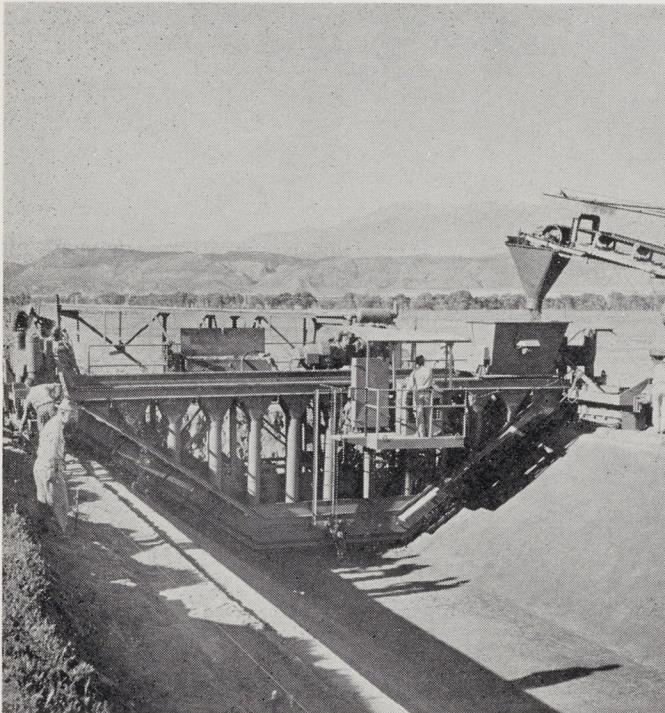
## UNIQUE MACHINES SPEED AQUEDUCT CONSTRUCTION WORK



Shown above is a canal trimming machine in operation on the westerly end of the Casa Loma Canal on the main Colorado River Aqueduct. This machine trims the canal to the final fine grade to provide the best foundation for concrete. In the early days of construction during the 1930's, Contractors Wood and Bevanda designed and constructed a similar machine which greatly simplified the trimming operation.



A view of a section of canal after being trimmed by the trimming machine and prior to the placing of concrete. At this point on the westerly end of the Casa Loma Canal, the canal is 11 1/2 feet deep, has a bottom width of 12 feet and a top width of 46 1/2 feet. It will have a capacity of 1000 cubic feet per second and a rate of flow of more than 6 feet per second.



Another of the unique machines being used on the District's expansion program is the canal lining machine shown in operation above. This machine paves the entire canal, bottom and sides, in one operation. The concrete it places is 4 inches thick. A machine similar to this was also designed and constructed by Contractor Clyde Wood during the initial construction of the Colorado River Aqueduct.



Workmen in this photograph are pouring a concrete cradle for the Lakeview Siphon to provide a better foundation where the siphon crosses the San Jacinto flood control channel near the town of Lakeview. Each of the pipe sections has an inside diameter of 13 feet and weighs more than 60 tons. In the background a specially designed "Pipemobile" is moving one of the pipe sections into place.

# NEWS FROM FIELD AND OFFICE



Richard B. (Dick) Ward—Died April 27

Richard (Dick) Ward, Engineer in charge of the enlargement of Lake Mathews for the Metropolitan Water District, died April 27 at the Parkview Memorial Hospital in Arlington, after a short illness following a heart attack. He was one of the country's foremost water supply dam builders, and at the time of his death was directing work to increase the storage capacity on the terminal reservoir of the Colorado River Aqueduct.

Dick was born in Belleville, Kansas, on December 28, 1888. He attended elementary and high school in Belleville and graduated from the University of Kansas in 1913, having majored in hydraulics. During the next 18 years, he was engaged in work on a number of engineering projects including the construction of a government railroad in Alaska, United States Bureau of Reclamation irrigation projects in Montana and Wyoming, and the construction of a number of earthfill dams.

In 1931 he was employed by the Metropolitan Water District to assist in the construction of some phases of the Colorado River Aqueduct. In September 1935, he was made Resident Engineer on the construction of the dam and dike and appurtenant works for the Cajalco Reservoir (now Lake Mathews), the terminal reservoir of the Colorado River Aqueduct.

He left the District in 1938 to accept a position with the U. S. Bureau of Reclamation in Denver, Colorado. From that time until 1956 he worked as a construction engineer on a number of dams in Colorado and Texas, and with

the U. S. International Boundary and Water Commission, and as Engineer Advisor to the Snowy Mountains Hydro-Electric Authority in New South Wales, Australia.

In 1956 he returned to the employ of the Metropolitan Water District to work on the enlargement of Lake Mathews from its present capacity of 107,000 acre-feet to 182,000 acre-feet, part of a \$200 million expansion program being carried forward by the District to bring the Colorado River Aqueduct to its full capacity.

Dick is survived by his widow, Louise L. Ward; two daughters, Mrs. William (Nancy) Fabian of El Paso, Texas, and Mrs. John (Eleanor) Ellis of Carlsbad, California; a sister, Miss Mary Ward of Oakland, California; two brothers, Dr. Roscoe Ward of Boise, Idaho, and Nelson Ward of Belleville, Kansas; and five grandchildren.

He was a Mason and a Shriner, and a life member of the American Society of Civil Engineers.

Funeral services were conducted Wednesday, April 29, at the Powell Mortuary, 9695 Magnolia Avenue, Arlington.

\* \* \*

David H. Smith became eligible for his 20-year service pin on March 27, 1959, having first been employed by the District as a Chainman on field surveys for the distribution system on August 4, 1936. During the next five years, he worked as an Engineering Aide and Inspector on the location and construction of various distributing system fea-



David H. Smith—20 Years of Service.

tures including Lake Mathews and the Palos Verdes and Orange County Reservoirs.

On completion of the original construction work in 1941, Dave worked for the next two years as an Attendant and Laboratory Helper at the Softening Plant. He resigned from the District in 1943 to enter La Sierra College, and was re-employed as a Chemist at the Softening Plant in 1946. He continued in that capacity until 1956 when he was transferred to the Construction Field Organization and placed in charge of the laboratory making tests and investigations preliminary to the enlargement of Lake Mathews. He is working in this capacity at the present time.



The members of one of the District's hard-working survey parties take a short break before continuing their work on surveys for the canals being constructed on the main Aqueduct and on the Second San Diego Aqueduct. Left to right are Don Potts, Junior Engineering Aide, Johnny Fielding, Junior Engineering Aide, Bill Kelley, Engineering Aide, Russell Buermann, Chief of Party, and Don Dressler, Junior Engineering Aide.

